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CALIFORNIA POLYTECHNIC SCHOOL

Bulletin of Information
1921-1922



SAN LUIS OBISPO, CALIFORNIA

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BULLETIN

OF THE

California Polytechnic School

A State School of Agriculture, Mechanical Arts,
Domestic Science

SAN LUIS OBISPO, CALIFORNIA

1921-1922

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HISTORY.

The act creating the California Polytechnic School was passed by the Legislature December the seventeenth, 1901. This law provided for a Board of Trustees whose first duty would be to select a suitable site, at or near the city of San Luis Obispo, said Board to be appointed by the Governor.

The Board of Trustees was instructed by Governor Gage in the selection of the site to take into consideration the healthfulness, moral and social environments, and other facts and circumstances affecting the suitability of the site in question as a location for such an industrial school. The Board of Trustees, after considerable investigation and careful consideration of a number of available places, finally, in March, 1902, located the School one-half mile north of the city of San Luis Obispo.

A Director of the School was elected May 27, 1902; the cornerstone of the main building was laid January 31, 1903, and the first term's work began October 1, 1903.

The government of the School is vested in the Board of Trustees, consisting of the Governor and Superintendent of Public Instruction as ex officio members, and five persons appointed by the Governor for a term of four years each. Two regular meetings are held each year at the School and such other special meetings as may be called by the President of the Board of Trustees.

LOCATION.

The School is located upon a beautiful tract of land of nine hundred and thirty-six acres, formerly a part of the Dawson Lowe and Johnson estates, about one-half mile north of the city of San Luis Obispo limits. The buildings occupy the highest elevations on this tract and command a beautiful view of the city and surrounding valley.

Being on the border line between the city and the county, the School is accessible to both. The main line of the Southern Pacific coast line passes the school and has its division station located in the city.

To reach the school from the city, take a taxi or walk north on Torro street, then down Hathaway avenue to the California Boulevard, a distance of one mile from the center of the city.

PURPOSE.

The California Polytechnic School was organized for the purpose of providing practical training for the young men and women of the State who desire instruction more closely identified with the farm, shop and home life than that offered in the high school.

It offers to the young man practical instruction in Agriculture and other subjects that will enable him to make more money on the ranch and to make farm life more attractive.

It offers a strong course in Engineering-Mechanics which trains young men for life in the shops, power plants and the various branches of the electrical industry.

To the young woman it offers practical training in housekeeping and home-making; in fact in all phases of Household Arts.

To both the young men and young women such cultural subjects are given as will best fit them for useful citizenship.

The California Polytechnic School is not a State preparatory school but a school for fitting young people for successful work in the serious business of making a living, whether it be in the shop or on the farm. It was not established to entice students away from the high school, but to provide with its half million

dollar equipment a practical nonprofessional training which could not be duplicated by any high school. Its primary object is to help the many boys and girls of the State who, although they have access to the high school, do not find in its manual training and shop work that intensely practical training which is found in the School shops and farm operated on the commercial scale, and without which success is impossible.

Since education is a preparation for life it is intended that the subject and instruction shall comprise a course of study tending to produce such a development of general personal capacity and efficiency as shall afford the best preparation for whatever work in life the student may later choose to take up. It is held that thorough discipline and normal development of the student may be attained through the use of agricultural, mechanical and household art studies as well as those more commonly pursued in the high schools. The quality of the work done will, however, be such that anyone who may desire to take further work in other institutions should be able, without difficulty, to meet the requirements for such advanced work. To this end the subjects of the Academic Department which are common to the other departments are accredited at the State University.

In addition to work for the individuals, special attention is given to the problem of enriching the community by an increase of agricultural resources and by directing efforts on the farm into channels most needed by the population of this section of the State. Aside from the regular courses, much benefit may be derived by those who desire to avail themselves of such expert advice and assistance as the School is able to furnish. By means of extension work, institutes, lectures, visits to farmers and correspondence, those not able to attend regularly may derive great benefit from the School. It is believed that success in the work of this School will mean the enrichment of the farming community and the solution of many of the problems of rural life in this section of the State.

The educational field naturally lies between the trade school and the university professions; the training of directors of workmen or educated practical farmers, mechanics or homemakers.

THE FARM AND GROUNDS.

The farm and grounds consist of nine hundred and thirty-six acres of land, the most of which is rolling, typical of a large portion of the coast counties. The farm is equipped with a complete line of modern machinery, and is stocked with registered Jersey and Holstein cattle, Percheron and Clydesdale horses, and swine of the Berkshire and Duroc-Jersey breeds, all of which are used for class study as well as for their customary purposes.

The school grounds have been laid out and planted under the direction of expert landscape gardeners, and their beauty adds materially to the pleasure of the school life. The plantings include hundreds of varieties of ornamental and economic plants, which are all available for field and laboratory study in Botany and Horticulture.

BUILDINGS AND EQUIPMENT.

Upon a slight rise of ground commanding a wide view in every direction are the main buildings of the School. They are uniform in style, the architecture being a modification of the old Spanish Mission. They are located in groups representing the various departments, connected by winding drives to California Boulevard, which affords an attractive approach from the city to the School.

The main group contains the Administration Building, Household Arts Building, and Science Hall, which are located in the center of the campus. On the far east

side, where their activities will not interfere with the other work, are the Horticultural Building, with its greenhouses, the dairy buildings, the animal industry and poultry building, the Creamery building, the three main shop buildings and a horse barn.

To the north and west is located practically all the tillable land, while on the southern end of the campus are the Power Plant and electrical laboratories, kitchen and dining hall building, and the boys' large dormitory and several cottages.

The Administration Building.

The Administration Building contains the School's offices, assembly hall, and several class rooms and laboratories.

The Household Arts Building.

The Household Arts Building contains sewing rooms, kitchen laboratory, dining room, pantries, Applied Design workroom, laundry, Botany laboratory and Herbarium, class rooms and instructors' offices.

Science Hall.

The basement of the Science Hall Building contains the physics and chemistry laboratories; the first and second floor the free-hand drawing room, library, study hall, mechanical drawing room and several class rooms.

Boys' Dormitory.

The dormitory is a new and modern building, providing rooms for a limited number of students. A large sitting room with fireplace, steam heat, electric lights and baths, are features of the building.

Dining Hall.

A new building, with large kitchen and pantries in addition, conveniently located, serves as dining hall for faculty and student residents at the school.

The Creamery.

The creamery occupies a commodious building, supplied with a hot water and steam system, electric power, pasteurizer, cream ripener, churns and separators of various standard makes, cheese-making apparatus and a refrigerating plant of six tons capacity. In fact, complete and varied equipment is in use which not only provides for the manufacturing and handling of dairy products, but also affords an opportunity for comparative study of dairy apparatus.

The Carpenter Shop.

The carpenter shop contains benches and tools for class of thirty men. A planer, band saw, swinging cut-off saw, combined power rip saw and mortising machine and turning lathes are included in the equipment.

The Forge Shop.

The forge shop contains sixteen double down-draft forges of the latest pattern, accommodating a class of thirty-two students. In addition to the above there is one power trip hammer, one large demonstration forge and auxiliary equipment, both hand and power drill presses and a complete line of small tools, including power emery wheels, oxyacetylene welding outfit, etc.

The Machine Shop.

The machine shop is equipped with eleven iron lathes, polishing lathe, universal milling machine, heavy planer, drill presses, shapers, power emery wheels, cut-off saws, and a variety of high-grade finishing tools and measuring devices. All machinery of the various shops is motor driven, electric power being supplied from the complete power plant owned by the School. The equipment of the shops is equalled by very few secondary schools in the country.

The Power House.

The power house is a commodious one-story building containing the electrical and mechanical laboratories, and the power plant which furnishes power, heat and light for the School.

The Electrical Laboratory.

The electrical laboratory is equipped with two 106-horsepower Sterling water-tube boilers with auxiliary apparatus; a 50-kilowatt three-phase generator, direct connected to an 80-horsepower Ball engine; a $37\frac{1}{2}$ K. V. A. three-phase generator, belted to a 50-horsepower heavy oil engine; a switchboard composed of two generator panels, one Terrill voltage regulator panel, two distribution panels and one plug panel, the latter giving a possible combination of over 800 connections for testing and experimental work. In addition to the above there is a large and varied equipment of alternating current and direct current motors and generators, meters, gas engines and other auxiliary apparatus for the study of the operation and construction of electrical and mechanical machinery.

The Mechanical Laboratory.

The mechanical laboratory is equipped with four-cycle gas, gasoline and heavy oil engines, one crude oil engine and an assortment of power pumps of high and low pressure, which, with the power machinery of the electrical laboratory, affords a means of studying the construction, installation and operation of power plants and pumping machinery.

Hydraulics Laboratory.

The hydraulics laboratory was especially planned by the School's Engineering-Mechanics Department for the purpose for which it is being used. It comprises a practical laboratory in the form of the school water system, distributed throughout the campus in various hydraulic units. There is a complete equipment covering instruction in various types of centrifugal and reciprocating pumps, weirs, meters, one pumping plant consisting of one four-inch single-stage vertical centrifugal pump and one four-inch two-stage vertical centrifugal pump, each direct connected to a 2200-volt three-phase variable speed induction motor for constant and variable head tests. In addition to the above there is a complete equipment of pressure measuring devices, including pressure gauges, gauge testers, manometers, etc.

Laboratories.

The laboratories are well equipped with the instruments and apparatus for work in general and Agricultural Chemistry, Physics (including Photometry and X-ray apparatus), Freehand and Mechanical Drawing, Electricity, Land Surveying and Irrigation, General Science, Botany and Plant Propagation, Crops, Horticulture, Dairying and Creamery work, Sewing, Cooking and Applied Design.

The School Library.

The library which is in charge of a competent librarian now contains about three thousand volumes, and this number is being greatly increased. In addition to a good collection of standard English works, there are included standard present-day works on Agriculture, Horticulture, Animal Husbandry, the Household Arts, Electricity and the various Mechanical lines. Besides the general reference works the reading room is equipped with many technical and popular magazines, daily papers, and a file of Government and State Agricultural publications. These are accessible at all times to the students.

Other Buildings and Equipment.

The other buildings are a dairy barn and silo, a plant propagation house, green-houses, and lath house, an incubator cellar, poultry houses, swine houses, pumping house, tool sheds, hay barns, cottages for employees and a government rifle range.

EXTENSION WORK.

Definite lines of extension work are being developed by the School in order to extend as widely as possible the benefits of new agricultural methods and information and to encourage progressive efforts among farmers and their families.

Upon request, personal visits are made to farms, a study of their conditions and problems made, and advice given. Many requests for such work have been responded to during the past year and valuable service rendered. Where personal visits are impossible, much can be done by correspondence and the heads of the various departments are continually replying to inquiries of different kinds.

Conferences, institutes, and meetings with different organizations interested in agricultural topics are held during the school year and it is desired to develop this work into a series of farmers' meetings outside of the School, reaching all parts of this section of the State. At these meetings many problems of the farm, home and neighborhood life are considered. It is hoped that during the coming year short courses for adult farmers may be continued at the School.

Extension work through the district grammar schools by means of single lectures in different places will be further developed during the coming year. Many schools have been reached this past year by work of this kind and the heads of the departments of the School are prepared to respond to all calls of this kind in the line of their particular work.

The Household Arts Department is planning the enlargement of the extension courses in cooking, millinery, sewing and hospital work so successfully carried on this last year among the wives and daughters of the farmers and townspeople. Courses of lectures will be given to specially organized classes of women who desire such work.

Through these methods of extension work it is intended to make the School of the greatest practical value to the population of this section of the State by encouraging any efforts, such as the erecting of better farm buildings, silos and the like; the improvement of stock and dairying methods, soil tests and the selection of seeds, orchard spraying, pruning and grafting and intensive methods of farming. Encouragement will also be given to the things which benefit the home and neighborhood life.

GENERAL INFORMATION.

Entrance Requirements.

General. The School is open to any boy or girl upon the conditions stated below: All applicants must present satisfactory evidence, from the school last attended, of good moral character and preparation.

Admission. Graduates of the eighth grade, at least fifteen years of age, will be admitted without examination to the first year of all courses upon presentation before September the 8th of a certificate or diploma of graduation. However, those who have not this, but who, in the judgment of the committee on credentials, are mature enough to successfully carry on the work, will be permitted to enter without regard to their previous academic preparation. All applicants must establish, at the time application for admission is made, by letter or otherwise, the fact that they were in good moral standing at the school last attended.

The courses in Agriculture, Mechanics and Household Arts for the most part consist of practical work, but such theory is given as is necessary for a clear understanding of the work at hand. No student should come to this institution expecting to find the work easy. To keep up with the classes requires strict attention to studies and conscientious effort on the part of the student. No student will be retained on the School rolls who through neglect or other unnecessary causes does not keep up with his work.

Exception. A grammar school graduate under fifteen years of age may be admitted as above outlined provided that a special recommendation showing ability to carry on the work be obtained from the last teacher, and that the student live with his or her parents, a guardian or at the school dormitory while attending school.

Admission to Advanced Standing. Students who have done work in high schools, academies or colleges will be admitted upon presentation of a certificate or statement properly signed showing amount and grade of work completed. (A blank form for this statement will be furnished upon application to the Director.)

No student will be assigned to classes until his transferred credits have been properly filed. At the end of the first semester, if the student's work is satisfactory, the credits from his former school will be accepted in so far as they cover the work of this school. High school graduates are generally able to complete the courses in two years providing they have credit for required work in English, Mathematics and Science.

Admission by Examination. Applicants seventeen years of age or over who do not hold a grammar school certificate, but who submit a recommendation from their last teacher or their superintendent of school, will be admitted upon satisfactorily passing examinations in English composition, arithmetic, United States history and geography. The subject-matter of the examinations will cover the leading facts of the grammar school course. Students applying to be admitted upon examination must send their recommendations with their application for admission. The examinations will be held in the school buildings on the date indicated in the school calendar.

All applications for admission to the School must be made on the regular form which will be mailed upon request and should be sent to the California Polytechnic School, San Luis Obispo, California, not later than September 8th. Students not filing applications before September the 8th may find it impossible to register on registration day and be charged a late registration fee of \$2.00.

Applicants are admitted up to the capacity of the school in the order of the receipt of their applications.

Registration and Schedule. A fee of \$2.00 is charged for late registration. Each student is assigned to a faculty member, who will act as his adviser in all matters pertaining to his course of study.

The act of registering signifies acceptance of the regulations of the school and the intention to abide by the same.

Divisions of the School Year.

The regular school year at the California Polytechnic School is 36 weeks in length, and is divided into two semesters (known as the first and second) of eighteen weeks respectively. Each school week normally consists of five days beginning with Monday and ending with Friday. The school day is divided into nine 45 minute periods beginning with 8:15 a.m. and ending at 4:00 p.m.

Units and Credits of Work.

A credit of work consists of 18 recitation periods of 45 minutes each or 36 laboratory periods of 45 minutes each.

A unit of work consists of three-tenths of a credit and is that referred to by the State University in their circular of information.

CLASSIFICATION OF STUDENTS.

General.

Students are classified as Regular, Special, Irregular, Vocational, First, Second, Third and Fourth Year, depending entirely upon the work completed and not the years in attendance. For illustration, second year students with less than 75 per cent of the first year's work completed are classified as first year students. The same rule applies to all other classes.

Regular Students.

A regular student is one who is admitted to full standing upon presentation of a diploma of graduation from a grammar school or upon passing an equivalent entrance examination and who takes one of the full courses of study as heretofore outlined. All students are advised to register as regular students. The essential qualifications are easily obtained by all, and the student will receive much more benefit from attendance upon the School if he or she follows the regular course of study, which has been carefully planned by the faculty.

Special Students.

Prospective entrants of average high school age are not encouraged to apply for admission as special students. However, those of mature age who are well prepared and who give evidence of their sincere desire to specialize along particular lines may be admitted as special students upon the following conditions:

They must fulfill all the requirement of admission for regular students and give additional satisfactory evidence of their ability to carry on the special work elected.

They must carry satisfactorily at least twenty-five credits of school work.

Exception. Persons regularly occupied in or near San Luis Obispo, and who are qualified as above outlined, may be allowed to register with less than twenty-five units of work on approval of the head of the department.

Irregular Students.

A few students not pursuing a regular course or specializing in any particular branch may be admitted to such classes as they may be prepared to take with advantage.

FOR FURTHER INFORMATION ADDRESS

THE DIRECTOR,

CALIFORNIA POLYTECHNIC SCHOOL,
SAN LUIS OBISPO, CALIFORNIA.

DISCIPLINE AND GOVERNMENT.

General. The purpose of the institution is to build sound character as well as to train the mind and the hand. To that end no cost is too high to keep the moral atmosphere of the School clean and wholesome. Any conduct that is deemed harmful to the morals of the school will lead to dismissal. Boys and girls not showing an earnest purpose in making the best use of their time and energies will be reported to parents, and if satisfactory improvement is not shown within a reasonable time they will be asked to withdraw from attendance at the School. Regular attendance at all school exercises is required. A student failing to make a satisfactory grade in at least *fifteen credits* for a semester may be asked to withdraw. One hour in recitation or two hours in laboratory work each week for the semester counts as a credit, if the work has been satisfactorily done. Reports of the scholarship of all students are mailed to parents at the end of each semester or oftener. Hazing in any form, subject to severe punishment under section 367b of the Penal Code of California, will not be tolerated, and the Board of Trustees has ordered that expulsion shall be the penalty for such offense.

Government.

The government of the school is under military discipline. All students are members of the school battalion and are required to drill, perform guard duty and such other duties as are necessary to a self-governing body.

All students are required to wear the school uniform between the hours of 8:15 a.m. and 4:00 p.m. The mixing of the school uniform with civilian attire is not allowed. The uniform must at all times be worn in its entirety excepting during laboratory, farm and shop periods, when overalls should be worn. The school uniform is low enough in cost to be within reach of all and of a quality sufficient to meet the criticisms of the more wealthy students.

Card playing or the use of intoxicants, either on or off the campus, are prohibited to students connected with the School. Every student is expected to conduct himself at all times as a gentleman; with due respect to the rights of his neighbors and of the community in which he lives, whether in the dormitory or outside. Students not residing on the campus are subject to the same regulations as those quartered in the dormitories.

Every student who enters the school agrees to submit to its discipline. The first year especially is probationary, and students are subject to prompt suspension or discharge for an unsatisfactory record in regard to study, attendance, attitude or discipline.

Dormitory Discipline.

The military discipline of the School extends to the dormitory, requiring all residents to report five mornings each week for morning drill and setting-up exercises.

Regular study hours are observed when every student must remain in his room and attend to his studies. Students' rooms are subject at all times to inspection and regulation by the proper officers.

Students are not allowed to leave the campus without permission during study hours and the regular sessions of School.

Students are not allowed to bring firearms upon the campus without permission or retain them in their possession.

With the exception of the proctor, all officers of the Dormitory Company are appointed from the students.

EXPENSES.

Fees.

Tuition is free. Unnecessary breakage in the shops or laboratories is charged against the student and must be paid before credit is given for the work performed.

Books and Regular School Supplies.

These cost from \$15.00 to \$35.00 per year. Special clothing such as white suits for creamery and overalls for shop and field work cost \$4.50 each approximately and may be purchased locally if desired.

Military Uniform.

Every able-bodied male undergraduate student is required to take military and gymnasium exercises. A sum sufficient to cover the cost of the uniform, must be deposited upon entering. Of this amount any unused balance will be returned when the suit is delivered, depending upon the cloth market at the time purchase is made. This uniform, with normal care, will outlast two ordinary suits purchased at a greater cost. Students must at all times keep their personal appearance above criticism, this being one of the purposes of the uniform. With ordinary care a uniform should last two years.

Board and Lodging.

Board and lodging may be secured at the School dining hall and dormitories for \$30.00 to \$35.00 per month. All students are required to live at the school dormitory unless living with parents or having received special permission from the Director for other arrangements.

No deduction is made for any absence of less than five days. If students are compelled to be absent for that length of time they are allowed half rates if they serve notification before leaving. (See Dormitory circular for further information.)

Student Affairs Fees.

A fee of \$2.00 per semester for the boys and \$1.50 for the girls is charged each student by the Student Affairs Committee. For this he receives regular editions of the Polygram, a bi-weekly publication; the Polytechnic Annual published at the close of the school year, and admission to all minor athletic events.

Necessary Expense.

The necessary expenses for a nine months year varies from \$340.00 to \$410.00 as indicated by the following table:

Board and lodging.....	\$275.00 to \$325.00 a year
Books and other supplies.....	15.00 to 35.00 a year
Military uniform.....	35.00 to 41.00
Student Affairs Committee Fee, per semester, boys, 2.00, girls 1.50	

Dormitory Residence for Boys.

A building on the school premises provides a home for a limited number of boys. The price for room and board is approximately \$25.00 to \$35.00 a month. Occupants are required to furnish linen and portion of bedding needed. Linen and towels are laundered without extra charge.

An additional deposit of \$2.50 is required of each student residing in the dormitories, to pay for possible damage to his room or to the building. Each student is held responsible for the condition of his room and its furniture. The unused portion of this deposit is returnable at the end of the school year.

Detailed information concerning the dormitory is contained in a special circular which will be mailed upon request. (See Dormitory Discipline.)

Dormitory Residence for Girls.

The School does not maintain a dormitory on the campus for girls but contracts with private parties for the girls' accommodations. Contracts are arranged for with private families who desire to accommodate not more than five girls. These home accommodations, as also the girls, are under the direct supervision of the faculty. The discipline is in every respect as strict as that of the boys' dormitory. (See Dormitory Discipline.)

Self-Support.

A limited amount of employment about the School farm and buildings can be given more or less regularly to a few students who find it necessary to earn a part of their expenses while attending the School. No remuneration will be made for manual work of any kind which carries instruction with it. Some students pay a part of their living expenses by means of employment found in San Luis Obispo, chiefly from private families, caring for lawns, gardens, or doing housework. The School office acts as an employment bureau.

No student should come to the school expecting to pay his entire expenses by labor during the school year. The school work occupies the most of the day, and the evenings are required to prepare the lessons for the following day.

STUDENT ORGANIZATIONS AND ACTIVITIES.

General. Student organizations, in harmony with the aims of the institution and the development of the best school spirit, are encouraged. In addition to the various athletic teams, the various student department clubs and associations for the study of the varied lines of interest, have their places in the school life.

Debate and Public Speaking.

A regular class in debating stimulates interest in practical and public speaking. The yearly "Polytechnic Journal," as also the bi-weekly "Polygram," furnishes a still further outlet for the activities of the students in English. Student organizations, such as the Amapola Club (for Household Arts students), the Mechanics' Association and the Agricultural Club, all offer excellent opportunities for practice in public speaking.

Playgrounds and Athletics.

The athletic grounds are not excelled by those of any school of like grade in the State. Separate playgrounds are maintained for boys and girls. The girls' field contains courts for tennis, basketball and other games. The boys' athletic grounds include a football field, a baseball diamond, courts for tennis, basketball, an excellent five-lap running track and facilities for other outdoor games and sports. The tennis courts mentioned are built on a four-inch concrete base and were constructed by the students during the spring of 1914. It is planned to construct a swimming pool as soon as funds are available.

Athletic contests are held with high schools in San Luis Obispo and neighboring towns, and occasional games are scheduled with more distant high schools. Teams from Santa Barbara, Los Angeles, San Jose and Watsonville have been played in the last two or three years. All school athletics are under the coaching and training of competent members of the faculty.

TO THE PARENT OR GUARDIAN.

The pages of this bulletin should be examined carefully, and selection be made of the group of studies desired only after full consideration of the advantages of the several courses offered in connection with the aims and ability of the pupil

The course entered upon (and the elective studies) can not afterwards be changed until the year's work is completed.

It is of the greatest importance to all students entering this institution that they give attention to the following matters:

1. The student must take upon himself the greater part of the responsibility for his work. If he is not earnest or mature enough for this, he is not fit to undertake the work of this school.

2. The average student who is taking a full course will need about three hours of study at home daily, in addition to the study hours his schedule may allow him at school. Failure to spend the necessary effort on his work at home is certain to result in the student's failure at school. Students should develop the habit of studying with attention strongly fixed on the work at hand. To this end a quiet room is a necessity. Parents will greatly assist the student to make his school work a success if they insist upon regular hours for study, free from interruptions. *Have your boy or girl make a business of school work.*

3. The student who fails to appreciate the importance of steady application and mastery of his task from the very beginning of his course may expect that he will soon be lost. Both for his success in school and after life he should acquire habits which will mark him as one who is prompt, orderly, neat, and thorough—one who does one thing at a time and always does it well.

4. In cases in which the school work is too heavy for faithful students of frail health, it is suggested that parents communicate with the Director of the School, who will arrange for lightening the student's work by lengthening the time to complete the prescribed course.

5. Worry for some; and social distraction for others, does more harm than does school work.

6. Parents are invited to visit the school and confer with their children's instructors and faculty advisor. Such visits should be arranged for in advance through the main office. The most convenient time for such visits is near the close of school in the afternoon.

COURSES OF STUDY.

Four principal lines of instruction are undertaken by the school, viz, Agriculture, Engineering-Mechanics, Household Arts and Academic. In all of these lines the time given to instruction is about equally divided between recitations and lectures in the classroom and practical work in the shops, fields and laboratories. The courses of study are of two general kinds: regular courses of four years' length, and such short courses as may be outlined and announced from time to time. A Junior certificate is given on request at the completion of the first three years of prescribed work and is a guarantee that the student's record up to the beginning of the senior year is clear for graduation.

The courses in Agriculture, Engineering-Mechanics and Household Arts do not prepare for the State University. They are practical courses giving a practical training, which will enable those completing them to successfully pursue their chosen line of work when school days are over.

The Mathematics, Science, History and English elected from the Academic Department and common to all the practical courses are accredited at the State University.

Students, after completing any of the practical courses, deciding to pursue advanced work or take a professional course at the State University may do so by taking additional work. This additional work may be taken at the State University, a high school or at this institution as post-graduate work.

Students will not be enrolled in the Academic Department except in Commercial work without a written order from the parent or guardian stating that they ultimately intend to pursue a University course. This order should clearly state just what University course will be pursued in order that the maximum amount of practical work having a bearing upon that course may be elected.

THE AGRICULTURAL COURSES.

The subjects offered in Agriculture cover every phase of that work and are arranged so that the student who follows the plan outlined will proceed from the simplest and most elementary studies to those which are more advanced. They are also arranged in such a way as to bring the subjects in which instruction through out-of-doors activity is prominent at those seasons of the year when such work is possible.

The successful farmer must understand the fundamentals of Physics, Botany and Chemistry sufficiently to cope with the factors upon which crop production depends, such as proper fertilization, both by manure and artificial fertilizers; proper cultivation to conserve moisture, to increase the water-holding capacity, to make plant food more available, to prevent leaching and to prevent puddling; proper drainage to increase the cultivated area, to make the land accessible earlier in the year, to supply a more uniform amount of water to the plant during the growing season and to promote ventilation so that the bacterial processes in the soil may be carried on more efficiently.

It is necessary also that there be proper crop selection, involving quantity of seed and choice of the varieties best adapted to certain conditions and the establishment of proper systems of crop rotation. In this way weeds and insects may be controlled and greater crop yields obtained.

There is no branch of farming which can be carried on in connection with general agriculture with greater profit than Animal Industry, including Poultry Raising and Dairying. Indeed, intensive Dairying or Stock Raising becomes a necessity whenever the aim is to permanently increase the productiveness of the farm in the most economical manner. Special attention to Dairying is desirable also because of the relative importance of this phase of the work in this section of the State. For this reason the work in Stock Raising and Dairying is very thorough and complete.

No less thorough than the course in Dairying is the course in Poultry Raising. It is not an uncommon thing for the people of the country as well as the people from the city to invest a large share of their savings in poultry and it is also not an uncommon thing for them to lose a large percentage of their earnings. This loss is due largely to the belief that anyone can run a poultry farm successfully without special training in this line. In order, therefore, to limit this loss which occurs yearly all over the country and in order to stimulate this industry so that it may gain its proper place in the life of agriculture, the work at this school is made as practical as possible.

The work of the Agricultural Department would not be completely outlined if Horticulture were not mentioned. In the work in Horticulture, special attention is given to the growing of fruits and vegetables and to the intensive methods necessary to attain success and to the planting and care of flowers, shrubs, and trees. The problems of rural home development are also given a prominent place.

Much time is devoted to the subjects of soil fertility and to the fungus diseases and insect pests. All the work of the courses is based upon the fundamental subjects of Botany, Entomology and Agricultural Chemistry.

Required for Graduation, 230 Credits.

SECOND YEAR.

THIRD YEAR.

FOURTH YEAR.

(15)

Poultry Industry. A course covering the fundamental phases of the poultry industry. The chief subjects considered are the breeding, feeding, rearing, housing and handling of domestic birds; also a study of the breeds commonly found on California farms, particular attention being paid to inheritance and the evolution of the breed types. A careful study is made of the distinguishing points of the different breeds and varieties and their standard requirements. The practice work includes work in incubation, brooding, feeding, caponizing, bleeding, dressing and packing fowls for market, preparation for exhibition and the judging of show birds. Each student is required to care for a small flock, and to keep a careful record of it, with a financial statement at the end of the feeding period.

Dairy I. Includes a study of the secretion, composition, properties of milk and factors influencing the quantity and quality of milk. Milk ferments and fermentation; the care of milk and milk products on the farm; a comparative study of the methods of creaming; the construction and operation of farm separators; the principles and application of the Babcock test; the first principles in butter, cheese, and ice cream making all have a place in the course.

Dairy II. This course comprises the study of the principles of creamery work and butter making, the construction and care of creameries and their appliances, methods of sampling and grading cream, pasteurization, starter-making, cream ripening, creamery accounting, cheese making, ice cream making, and creamery and milk plant refrigeration.

Dairy III. This is an intensely practical course covering one or two years, depending upon the ability and experience of the student. It is intended for those who desire to become specialists in butter or cheese making or the handling of market milk and ice cream. A certificate as specialist in the particular branch chosen will be given to students satisfactorily completing the prescribed work after they have served six months successfully in a commercial creamery, cheese factory or milk plant, thus demonstrating their ability to apply in a practical way the training of the course. The certificate is therefore a guarantee that the student can do the work, not only at the school plant but at any commercial plant.

The subjects taught are as follows:

Milk and Cream Testing; Butter, Cheese and Ice Cream Making; Creamery Management, Dairy I, Dairy Mechanics and Refrigeration, Dairy Bacteriology and the judging of Dairy Stock and Dairy Products. Hours, credit and schedule to be arranged with Instructor in Dairying. *Open only to special students.*

Stock Judging and Breeds. Including history, development and characteristics of the leading breeds of livestock; pedigrees and performances of superior individuals among horses, cattle, sheep and swine. The fundamentals of livestock judging and its relation to production. A study of animal form and character, names and location of parts, indications of feeding capacity, constitutional vigor, sexuality and capacity for production of meat, milk, wool, work and speed, market requirements, breed identification and adaptation.

Diseases of Farm Animals. This course deals with the practical side of the disease of farm animals, the more common and serious diseases of domestic animals, their causes, prevention and cure.

Dairy Cattle and Herd Management. (a) Dairy Cattle. Form and physiological characteristics of the dairy cow, difference in the efficiency of dairy cows, improvement of dairy herds, methods of testing and the use and importance of pure bred dairy sires. Practical problems. Judging with reference to features of dairy form and performance.

(b) Care of the Dairy Herd. Feeding for milk production, the dairy calf and its successful development, care of dairy sires, and other factors concerned in the successful management of the dairy herd.

(c) *Pure Breeds.* The management of the registered breeding herd, advanced registry systems and their influence, a study of the performance and breeding of the leading families of the various dairy breeds, judging by the breed standard.

(d) *Dairy Farm Economics.* The relation of dairy farming to the maintenance of soil fertility, intensive dairying with food cows, suitable crop relations to secure an abundance of cheap, farm-grown protein, soiling and other systems, dairy farm buildings, silos and yards.

Feeding of Farm Animals. Involves a consideration of the classes of food nutrients; the ordinary and possible functions of each in the animal body; digestion, absorption, and assimilation; the extent and nature of the demands for maintenance, growing and fattening; milk and work; principles in selection of rations; feed stuffs; feeding standards, and compounding rations.

Meats. This course includes a study of the killing, dressing, cutting and curing of beef, pork and mutton. Elective Course. Given only by special arrangement with the Head of the Department.

Principles of Animal Breeding. A treatment of the principles and practices involved in the improvement of the domestic animals. The course includes a discussion of the subjects of reproduction, variation, heredity, selection, line breeding, inbreeding, cross-breeding, grading, and other subjects correlated with the breeding and improvement of farm animals.

Principles of Plant Breeding. A study of the methods used in the improvement of our existing varieties of plants and fruits and in the origination of new varieties. Practical instruction is given in the greenhouses, orchards and gardens of the School, accompanied by visits to the famous flower and vegetable seed farms of San Luis Obispo County.

Botany 3d. Elementary Botany. A second year Agriculture course, and third year Household Arts course. A general course in practical Botany, with instruction in class, laboratory and field. First semester: seed germination and a study of roots, stems, leaves, flowers and fruits. Second semester: a study of plant structure with the compound microscope, tracing the development of algæ, fungi, bacteria, mosses, ferns, seed plants, weeds, grasses, flowers, and other wild plants; plant breeding and plant societies. The extensive flora of the school gardens and grounds offers a very interesting and profitable field for botanical study.

Horticulture I. Plant Propagation. This course consists mainly of practical work in the propagation house, greenhouses, lath-houses, cold-frames and hot-beds, together with work on the school grounds. Thorough training is given in the multiplication of cultivated plants by seeds and by grafting, budding, layering, etc. Practical work is also given in vegetable gardening, in the landscaping of large grounds and in the care of ornamental plants.

Horticulture II. Principles of Fruit Growing. This course consists of a study of the general principles of fruit growing, including the location of orchards, planting, cultivation, irrigation, pruning and spraying, and the marketing of fruits. Practical instruction is given in the school orchards and frequent visits are made to successful orchards in this and other parts of the county.

General Agriculture. This is one of the most general of the different courses offered in Agriculture. It is designed to furnish a practical working knowledge of the fundamental elementary principles underlying successful farm practice. It comprises a study of the composition of farm plant foods and their sources, soils and soil origin, crop origin, production and history, as also their place in rotative and cultural methods. Farm implements and general farm conveniences are also given consideration from a constructive and operative viewpoint.

Farm Management and Accounts. This course considers the main factors having a bearing upon successful farming, such as acreage, capital, handling of labor.

proper equipment, cropping systems, marketing, etc., all as applied to the different types of farming. Various systems of cost accounting are considered during the latter part of the semester.

Soils and Fertilizers. Soils and Soil Fertility. Prerequisites, Chemistry 12b and Physics 11. A study of the physical features of the soil, including soil origin, soil-forming rocks, agencies of soil formation, and the characteristics of the principal soil types.

Tillage and its effect on the texture, aeration, moisture and plant food content of the soil; different systems of farming, such as summer fallowing, dry farming, irrigation and crop rotation, are studied. The chemistry of the soil, its plant food constituents, alkali and other harmful materials, commercial fertilizers, the use of stable manures and green manure crops; the depletion, conservation and renewal of soil fertility, are all duly considered. The laboratory period is devoted to soil physics, a study of soil types, and to working out some of the soil problems commonly found on California farms.

Agricultural Chemistry. Prerequisites, first, second and third years, Agriculture course. The general principles of chemistry are presented as applicable to the science of modern agriculture. It includes the chemistry of plant and animal life, together with the analysis of soils, fertilizers, feeds, dairy products, irrigation waters and other substances of interest to the farmer. The laboratory work is made as practical as possible.

Farm Motors. The work in farm motors is taken up at the power plant and in the electrical laboratory. The various divisions covered are: The operation and repair of the different types of gasoline and crude oil engines, the operation and adjustment of the steam engine, the care and operation of steam boilers, the wiring and installation of electric motors and generators, refrigeration systems, etc.

Subjects in the Agriculture Course taken from the other departments are described in detail in their courses and are as follows:

Academic Department.

English 1a
Industrial English 1
Mathematics 2a and 2c
Agriculture Mathematics
Drafting 6b¹
Music
Chemistry 3b
Physics 3a
United States History 4a
General Science 3h
Free-hand Drawing 6a¹

Mechanics Department.

Carpentry I
Forge I
Surveying

THE ENGINEERING-MECHANICS COURSES.

The four-year course in Engineering-Mechanics comprises practical instruction in the Carpentry, Machine and Blacksmith Shops, in Applied Electricity and Mechanics, as also such other allied branches as are necessary to give a thorough preparation for important positions above the grade of skilled mechanics in manufacturing and industrial plants.

The large scale upon which manufacturing operations are today conducted, the wide application of scientific principles to practical work, the rapid introduction of new and improved types of machinery, and the general substitution of automatic machines and special tools turning out work accurately by the thousand pieces in



San Luis Obispo, a city of 6,000 people, is on the coast line of the Southern Pacific Railway, 250 miles south of San Francisco and 225 miles north of Los Angeles. There are provided several daily trains from San Francisco and Los Angeles. Port San Luis, ten miles distant, is the harbor from which the Pacific Coast Railway passing through the city reaches 90 miles into the interior southward. Passenger steamers of the North Pacific Steamship Company call at Port San Luis on regular schedule. The climate of San Luis Obispo is a pleasing combination of sea and mountain air moderate in temperature both summer and winter. The ocean shore ten to twelve miles distant and picturesque mountains surrounding the town make the home of Polytechnic School a delightful residence section of the state. San Luis Obispo has churches representing the following denominations: Baptist, Catholic, Christian, Christian Science, Episcopal, Lutheran, Methodist, and Presbyterian, all of which welcome students who wish to find a church home during their residence at the school. The Catholic congregation occupies the famous Mission San Luis Obispo de Tolosa, established by Father Junipero Serra in 1772. A free public library established in 1897 now contains over 9,500 bound volumes and 7,000 unbound pamphlets and magazines. It occupies a \$10,000 building, the gift of Mr. Carnegie. Students in the School are given equal privileges in the library with residents of the city.

place of the older hand-operated machines, are influences which are creating many new and attractive employments for young men with natural mechanical ability. This growth and development of the mechanical and electrical industries has made it necessary to fill positions of responsibility with men of technical training, and the demand for such men to direct this work is increasing yearly.

The instruction offered in this Engineering-Mechanics Course is especially designed to meet this demand and to give the technical knowledge, skill, and training required for men to fill efficiently the positions just described. Throughout the four years, the training is of so practical a nature and is so closely related to commercial work that the graduate can not fail to find the profitable employment for which he has become fitted.

The graduates of this course are prepared to fill such positions as draftsmen, inspectors, engineers' assistants, assistants to foremen, master mechanics, power plant operators, surveyors, erection foremen, electricians, switchboard wiremen, marine engineers and many other positions in the steam and electric railway and marine transportation service.

From the foregoing it is readily seen that the course is broad as well as practical. The instruction is based upon scientific reasoning, always with a definite object in view, and develops accurate thinking and clear understanding. The work in the classroom, in the laboratories, and in the shops is planned to encourage the student both to think and to act for himself. This makes him self-reliant and resourceful, and gives him power to initiate, to plan and to execute work.

Drafting 6b¹. First year. Agriculture and Mechanics courses. General instruction in the use of instruments, plates in free-hand and mechanical lettering, solution of problems in geometrical construction, and preparation of working drawings. A textbook will be used and occasional examinations given.

Drafting II. Oblique, orthographic and axonometric projection; development of patterns for tinsmith work; elementary architectural drawing, with special attention paid to the development of envelopes for cornice work. More advanced work will be assigned to students desiring to specialize in this class of drawing.

Drafting III. The application of mathematics in calculating and determining the stresses and necessary sizes of machine parts; working drawings of machine parts; the design of gas and steam engines; reinforced concrete design; tracings and blue printing. The work of this course is carried on in conjunction with "Strength of Materials" and "Mechanics and Heat Engines."

Forge I. This course gives practical work in both iron and steel, and includes drawing, upsetting, welding, drilling, tempering, and repair work.

Forge II. A course in practical toolmaking, including, for the more advanced students, the making and repairing of machine tools. During the second semester pieces may be made from original designs by the more advanced students.

Carpentry I. A practical course in bench and machine work. Models of the joints commonly used in carpentry and joinery are made, followed by practical work both in and out of shop. This course includes instruction in the grinding and sharpening of tools, saw filing, work with the steel square as applied to roof framing, and, as far as possible, practical work on such of the school buildings as may be under construction.

Carpentry II. This course includes advanced work in cabinetmaking; the framing and construction of buildings; particular attention being paid to the construction of models according to blueprint drawings. Elementary pattern making, including lathe work and core-box making, is a part of the course. Students may be allowed to make a limited number of pieces of furniture for themselves.

Required for Graduation, 230 Credits.

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Machine Shop I. The course includes general instruction in the care and handling of machines, the cutting speed for various materials, the use of measuring instruments and general machine tools. Much time is given to exercise work at the lathe, shaper, drill press and grinding machine. By prearrangement original work may be taken after the middle of the year.

Machine Shop II. Instruction is given in gear cutting, planer work, machine and engine building, the construction of models and in general repair work. Special pieces of work are assigned to students, depending on their choice and skill.

Mechanics I. (a) Strength of Materials. Prerequisites, the second year of the Mechanics Course. Principles of stress, tension and shear, as applied in beam and building design; strength and physical properties of building materials, including timber, stone and metals. The design of beams, columns, riveted joints; reinforced concrete, and the more common problems in design, such as line shafting, etc.

(b) Heat Engines, Strength of Materials and Applied Mechanics. A laboratory analysis of two-cycle and four-cycle gas and gasoline engines, crude oil engines and steam engines, with tests of their efficiency and a study of their construction and operation. A study of valve setting, horsepower measurement, the care and operation of steam boilers and other of the more common mechanical problems.

Mechanics II. Electrical Machinery. The theory, construction, operation and repair of alternating and direct current motors, generators, arc lights, voltage regulators, alternating current rectifiers, converters, power transmission lines, telephones, and telegraph systems. The laboratory work is of a very practical nature, dealing with the important points brought out in the classroom study. Practical instruction in house wiring, line work and the operation of the school's power plant, which is located in the same building as the laboratory, is given to all students in the course.

Mechanics III. Hydraulics and Pumping Machinery. Prerequisite, the third year of the Mechanics Course. This course consists of a study of the flow of water in pipes, ditches, flumes and canals; the measurement of water, using the miner's inch, and the weir; the testing, operation and construction of power pumps, centrifugal pumps, and water motors. The work of the classroom is carried on in conjunction with that of the laboratory.

Surveying and Irrigation. Prerequisites, Mathematics 2, Drafting II. Instruction is divided between field work and the drafting room. Students learn the use of instruments, the laying out of foundations, running ditches to grade, setting cross-section stakes, with the calculation of the earth to be removed, field surveying, including the transfer of field notes to neat form in the drafting room. Special attention is given to the design and construction of irrigation ditches, dams and flumes. The large school farm offers an excellent field for practical work. This is supplemented in the spring term by a week of camp life devoted entirely to solving such field problems in land surveying and laying out irrigation systems as can not be worked out in the half-day periods of the regular school sessions. The equipment includes high-grade transits, levels, clinometers, barometers, chains, tapes and other apparatus sufficient for a class of twenty-five. Agriculture and Engineering-Mechanics courses.

Special Trade Course. For the benefit of those students who desire to learn a trade, special arrangements may be made whereby work in the Carpenter, Machinist and Blacksmith trades may be had. This course will cover one or two years, depending upon the ability of the student. A certificate will be given at the satisfactory completion of the course, certifying that the student has qualified for competent service in the trade pursued.

Subjects in the Engineering-Mechanics Course taken from the other departments are described in detail in their courses and are as follows:

ACADEMIC DEPARTMENT

English 1a	Physics 3a
Industrial English	Chemistry 3b
Mathematics 2a, 2c, 2d, 2f, 2b ¹	United States History 4a
General Science 3h	Music
Free-hand Drawing 6a ¹	

THE HOUSEHOLD ARTS COURSES.

The four-year course in Household Arts offers training in the application of art and science to all the activities of the household. It takes into consideration the pertinent fact that the average household manager expends eighty per cent of the family income. Its courses are planned to meet the needs of three classes of people: Those who wish to become teachers of household science and arts by later completing their teaching training at a normal school; those who wish to become workers in the trade or professional world as housekeepers, dietitians, trained nurses, matrons, seamstresses, dressmakers, milliners, designers or decorators; and those who wish training in the varied subjects of household science and arts for use in the home.

Physiology and Hygiene. A study of the human body with special reference to the laws of health.

Domestic Science I. Foods. Studied in conjunction with Chemistry 12b and Cooking I. The course includes a complete study of the carbohydrate foods—their source, chemical composition, cookery, digestion, and economic value. This is followed by similar consideration of the fats and proteids.

Domestic Science II. Dietetics and Nutrition. Prerequisite, Chemistry 12b. A review of the physiology of digestion; a study of dietaries for adults, children, and the family, with special reference to cost. Diet in disease. Home nursing and emergencies; methods of cleansing and agents used; hard and soft water, soap and detergents.

Domestic Science III. Home Economics and Sanitation. This course includes a study of the sanitary construction of houses; sanitary, economical and artistic house furnishing; systematic housekeeping; buying, and keeping accounts; water supply; disposal of waste; heating, lighting and ventilation.

Cooking I. A laboratory course in conjunction with Domestic Science I. It includes practical instruction in the preparation and cooking of cereals, vegetables, milk and cheese, eggs, fish and meat, and bread; a study of ranges, fuel, cleansing agents and kitchen appliances.

Cooking II. This second year of cooking laboratory includes the preservation of fruits and other foods; the making of pastry, cake, and desserts; the planning and serving of meals, including the careful calculation of the cost of the meals; invalid cookery. In the spring term practical laundering is given: including dry cleaning and the washing of laces and embroideries.

Sewing I. Plain Sewing. A laboratory course in the fundamental principles of hand and machine sewing, including the making of undergarments and simple dresses. A study of dress lines with the use of commercial patterns. Instruction in repairing worn or torn woolen garments, patching cotton garments, mending stockings and kid gloves. Each student is required to make a gymnasium outfit—bloomers and middy; a kitchen outfit—two aprons, two towels and two holders; a plain set of undergarments; an embroidered set; and two simple dresses. Textiles.

HOUSEHOLD ARTS. (FOUR YEAR COURSE.)

Required for Graduation, 230 Credits.

FIRST YEAR.

SECOND YEAR.

THIRD YEAR.

FOURTH YEAR.

Subjects	Semesters				Subjects	Semesters				Subjects	Semesters								
	First		Second			First		Second			First		Second						
	Lecture	Laboratory	Lecture	Laboratory		Lecture	Laboratory	Lecture	Laboratory		Lecture	Laboratory	Lecture	Laboratory					
Hygiene and First Aid	2	2	2	2	English 1a ²	5	5	5	5	English 1b	5	5	5	5	Physiology 3c	3	4	3	4
General Science 3d	5	5	5	5	Chemistry, Household	3	3	3	3	Botany 3d	3	4	3	4	History 4a	5	5	5	5
English 1a	5	5	5	5	Household Arithmetic	5	5	5	5	History 4c	5	5	5	5	Domestic Science III	5	5	5	5
Free Hand Drawing 6a ¹	5	5	5	5	Sewing II	3	3	3	3	Glee Club	2	2	2	2	Sewing IV	5	5	5	5
Sewing I	10	10	10	10	Domestic Science I	3	3	3	3	Applied Art I	4	4	4	4	Physics 3a or Mathematics 2a or 3c	5	5	5	5
Music I	2	2	2	2	Cooking I	2	2	2	2	Domestic Science II	3	3	3	3	English 1c	5	5	5	5
Physical Training	4	4	4	4	Music II	4	4	4	4	Cooking II	2	2	2	2	English 1c	5	5	5	5
Glee Club	2	2	2	2	Free Hand Drawing 6a ²	4	4	4	4	Music III	2	2	2	2	Applied Art II	3	4	3	4
Assembly	1	1	1	1	Assembly	2	2	2	2	Sewing III	4	4	4	4	Physical Training IV	4	4	4	4
Totals	15	23	15	23	Glee Club	2	2	2	2	Physical Training	1	1	1	1	Assembly	4	4	4	4
Credits	15	11½	15	11½	Totals	18	23	18	23	Totals	19	23	19	23	Gardening	1	1	1	1
Required electives	2	2	2	2	Credits	18	11½	18	11½	Credits	19	11½	19	11½	Glee Club	2	2	2	2
Effective subjects—	1	1	1	1	Required Electives	1	1	1	1	Required Electives	2	2	2	2	Totals	19	19	18	22
Athletics	1	1	1	1	Effective Subjects—	1	1	1	1	Athletics	1	1	1	1	Credits	17	23	16	26
Orchestra or Glee Club	2	2	2	2	Athletics	1	1	1	1	Orchestra or Glee Club	1	1	1	1	Orchestra or Glee Club	17	9½	18	11
Literary Work (Journal or Polygram)	1	1	1	1	Orchestra or Glee Club	2	2	2	2	Literary Work (Journal or Polygram)	1	1	1	1	Required Electives	17	11½	16	13
Debating (Regular Studies)	1	1	1	1	Literary Work (Journal or Polygram)	1	1	1	1	Debating (Regular Studies)	1	1	1	1	Effective Subjects—	2	2	2	2
					Debating (Regular Studies)	1	1	1	1	Orchestra or Glee Club	1	1	1	1	Athletics	1	1	1	1
					(Regular Studies)	1	1	1	1	Debating (Regular Studies)	1	1	1	1	Orchestra or Glee Club	2	2	2	2
															Literary Work (Journal or Polygram)	1	1	1	1
															Debating (Regular Studies)	1	1	1	1

A study of the beginnings of textile and allied industries; weaving and spinning; rugs and baskets; cotton, flax, silk and wool fiber. The student is instructed in judging the various commercial fabrics as to adulteration and durability. Estimates of expense of finished garments are required in all sewing courses.

Sewing II. Dressmaking and Millinery. A laboratory course including the making of more elaborate skirts and waists than is required in the first course; the making of bed and table linen; the making and trimming of hats. Art needlework is planned and begun at school and finished at the home. Textiles are reviewed and a study made of the inventions for their manufacture. Each student is required to make a tailored shirt waist, a lingerie waist, a wool or silk dress and her fall and spring hats.

Sewing III. This course includes necessary garments for personal wardrobe; art needlework, including marking linen. An original letter or monogram is embroidered on a napkin, tablecloth or handkerchief.

Sewing IV. Advanced Dressmaking. Each student is required to make one gown independent of the instructor's help—a graduating dress with the necessary undergarments. This dress is to be simple and made of wash material and must be finished at least one week before the close of the term. Textiles, a study of their relation to sweatshops, child labor and the Consumers' League. Woman's responsibility as a consumer.

Applied Art I. Prerequisite, Free-hand Drawing 16a. Instruction is given in the fundamental principles of constructive and decorative art. The work covers the elements of art designs applied to work in cardboard, raffia, reed, embroidery, stenciling, block printing, leather and metal work. This work forms a foundation for Applied Art II.

Applied Art II. The principles of Applied Art I are adapted in the making of original designs that may be applied to surface decoration, to textiles in stenciling and wood block printing, and to objects of utility in the round. The relation of the design to the use of the object, the adaption of suitable ornamentation, and beauty in line and color as applied to interior house decoration. Advanced work is also taken up in leather, metal and jewelry work.

Domestic Chemistry. A course in general inorganic chemistry, including elementary chemical theory and calculation. A study of the common elements and their compounds, with emphasis upon the economic importance of each. Special attention is given to those applications of chemistry to the problems of the household, including the chemistry of foods and digestion.

Household Physics. A course covering the main principles of Physics including classroom and laboratory instruction in the mechanics of solids, liquids and gases, simple measurements and the fundamental laws of heat, light, sound, invisible radiations and electricity, with special emphasis placed upon the application to the everyday phenomena met with and the problems of the household.

Gardening. The course consists of a general study of the propagation of plants by cuttings, layering, budding, grafting and by seeds. The principles of vegetable gardening, floriculture and landscape gardening are also studied and practical work is given in the greenhouses, hotbeds, cold-frames and on the school grounds.

Practical Mathematics. This is a course in simple arithmetic—addition, subtraction, multiplication, division, and simple and decimal fractions, the object being to make the students proficient in rapid calculation of the problems that arise in everyday work in the laboratory and in the home. Simple Algebra is also given as a foundation for subsequent work in Chemistry and Physics. Should a student desire further work in Mathematics, her course may be so arranged that she will have an opportunity to enter the regular classes in Mathematics.

Physical Training. Required of all students. No one is excused without a certificate of disability from a physician or the recommendation of the instructor. Each student is required to procure the regulation gymnasium costume. The course consists of instruction in marching, calisthenics, light gymnastics, folk dances and wholesome games. Training in regular school athletics under the direction of a faculty member may be taken as a part of the second year work.

Subjects in the Household Arts Department Course taken from the other departments are described in detail in their courses and are as follows:

Academic Department.

English 1a, 1b and 1c

Free-hand Drawing 6a

Music 10a

General Science 3h

Chemistry 3b

Physics 3a

History 4a and 4c

Agriculture Department.

Botany 12c

ACADEMIC COURSES.

The courses in the Academic Department are for the most part common to the other departments' courses of study in one form or another. For the purpose of enabling those students who, through the practical instruction received in the other departments, have gained the inspiration to go on to institutions of higher learning, the Academic Department was established and its subjects accredited at the State University. All of the Academic subjects given were accredited with the completion of the school year of 1916-1917. Credentials are on file at the school offices verifying this fact and will be shown upon request. The institution's function is not that of a University preparatory school; its name, therefore, does not appear in the University's list of accredited schools. Since the school is rated as of collegiate standing the standard of its Academic subjects is very much higher than that of the average high school. Students are not permitted to major in this department except upon written request from their parents or guardians.

English 1a. English composition, rhetoric and literature. First and second years, all courses. The purpose is to aid the student in acquiring good habits of oral and written expression, and to impart a practical rather than a technical knowledge of rhetoric. A taste for good literature is cultivated by the study of books of literary worth that appeal naturally to the interest of the student.

Industrial English. A course designed especially to aid Mechanics and Agricultural students in the technical descriptive writings necessary in describing laboratory experiments, machinery and mechanical operations, surveys, and in writing specifications.

English 1c. English composition and literature. A course in composition and literature including the history of English literature.

Each regular student is required to pursue continuously the study of English until the subject is completed as required in his or her course of study.

Spanish 5e², 5e³. Three-year course. The course is offered primarily for those students who desire to enter the University or expect to need in their future life-work a speaking knowledge of a foreign language. At the end of this course the student will be able to translate at sight ordinary Spanish, construct simple sentences and carry on a conversation in Spanish.

College Entrance Course for College of Agriculture.

FIRST YEAR.

SECOND YEAR.

THIRD YEAR.

FOURTH YEAR.

	Units		Units		Units		Units
English 1a ¹ -----	1	English 1a ² -----	1	English 1b -----	1	U. S. History 4a -----	1
Algebra 2a -----	1	Geometry 2c -----	1	Chemistry 3b -----	1	Physics 3a -----	1
General Science 3h -----	1	Elective -----	2	Elective -----	2	Elective -----	2
Music 10a -----	1	Drill and Assembly -----	$\frac{1}{4}$	Drill and Assembly -----	$\frac{1}{4}$	Drill and Assembly -----	$\frac{1}{4}$
Drill and Assembly -----	$\frac{1}{4}$	Student Affairs Electives -----	$\frac{1}{4}$	Student Affairs Electives -----	$\frac{1}{4}$	Student Affairs Electives -----	$\frac{1}{4}$
Student Affairs Electives -----	$\frac{1}{4}$						

One unit each of frechand and mechanical drawing and botany must be taken during the course. It is recommended that the other electives be taken from foreign languages, history, shop work and courses in the theory and practice of agriculture.
 Student affairs electives may be obtained in athletics, glee club, band, orchestra, debating, dramatics and work for the two school periodicals, the Polygram and the Journal. One unit is equivalent to ten credits in the technical courses
 Required for graduation—17 $\frac{1}{4}$ units.

College Entrance Course for College of Letters, Science and Commerce.

FIRST YEAR.		SECOND YEAR.		THIRD YEAR.		FOURTH YEAR.	
Units		Units		Units		Units	
English 1a	1	English 1a	1	English 1b	1	U. S. History 4a	1
Algebra 2a	1	Electives	3	Electives	3	Electives	3
General Science 3b	1	Drill or Physical Training and Assembly	$\frac{1}{4}$	Drill or Physical Training and Assembly	$\frac{1}{4}$	Drill or Physical Training and Assembly	$\frac{1}{4}$
Elective	1	Student Affairs Electives	$\frac{1}{8}$	Student Affairs Electives	$\frac{1}{8}$	Student Affairs Electives	$\frac{1}{8}$
Music 10a	$\frac{1}{4}$						
Drill or Physical Training and Assembly	$\frac{1}{4}$						
Student Affairs Electives	$\frac{1}{8}$						

One laboratory science must be taken in the third or fourth year. The other electives must be so chosen as to include in the entire course three units of one of the following subjects: mathematics, history, physics and biological sciences, foreign language. Four units must be taken from the following subjects: English 1b, English 1c, history 4a, history 4d, mathematics 2b, 2d, 2f, physics 3a, chemistry 3b, physiology (adv.) 3c, botany 3d and advanced foreign languages.

Student affairs electives may be obtained in athletics, glee club, band, orchestra, debating, dramatics and work for the two school periodicals, the Polygram and the Journal. One unit is equivalent to ten credits in the technical courses.

Required for graduation—17 $\frac{1}{4}$ units.

College Entrance Course for College of Mining, Engineering and Chemistry.

FIRST YEAR.

SECOND YEAR.

THIRD YEAR.

FOURTH YEAR.

	Units		Units		Units		Units
English 1a ¹ -----	1	English 1a ² -----	1	English 1b -----	1	Algebra 2b -----	1
Algebra 2a -----	1	Geometry 2c -----	1	Solid Geometry 2d -----	1	U. S. History 4a -----	1
General Science 3h -----	1	History 4b or 4c -----	1	Trigonometry 2f -----	1/2	Chemistry 3b -----	1
Elective -----	1	Elective -----	1	Physics 3a -----	1	Elective -----	1
Music 10a -----	1/4	Drill and Assembly -----	1/4	Drill and Assembly -----	1	Drill and Assembly -----	1/4
Drill and Assembly -----	1/4	Student Affairs Electives -----	1/4	Student Affairs Electives -----	1/4	Student Affairs Electives -----	1/4
Student Affairs Electives -----	1/8						

One unit of freehand drawing and mechanical drawing must be taken at some time during the course. It is recommended that the other electives be chosen from foreign languages, history, shop work or mechanics I, II, III. Student affairs electives may be obtained in athletics, glee club, band, orchestra, debating, dramatics and work for the two school periodicals, the Polygram and the Journal. One unit is equivalent to ten credits in the technical courses. Required for graduation—17 1/4 units.

Latin 5b². Two-year course. The course is offered primarily for those students in the Household Arts courses who desire to take up the profession of nursing and will be given only for a class of five students. At the completion of the course the student should be able to translate at sight passages not previously seen, have a thorough knowledge of words, constructions, and a range of ideas, in common with the ground covered.

History 4c. Mediæval and Modern History. The period to be covered is from 800 A.D. to the middle of the nineteenth century. The ground covered is embraced in West's Modern History and Harding's Essentials in Mediæval and Modern History. History 4b covers the period of Ancient History.

History 4a. United States History and Civics. A course designed to give the essential features of the history and government of the United States in such a way that the students shall appreciate their environment and develop into intelligent citizens.

Mathematics 2a. Elementary Algebra and a review of arithmetic. First year, all courses.

Mathematics 2c. Plane Geometry.

Mathematics 2b¹ and 2b². Advanced Algebra.

Mathematics 2d. Solid Geometry.

Mathematics 2f. Plane Trigonometry.

Special Note.—The mathematical classes are taught with special reference to the needs of technical students.

Chemistry 3b. Elementary Chemistry. Prerequisite, Mathematics 3. A course in general inorganic chemistry, including elementary chemical theory and calculation. A study of the common elements and their compounds, with emphasis upon the economic importance of each. Special attention is given to the chemistry of the farm, the shop, and the household. Classroom and laboratory instruction.

General Science 3h. A general course introducing to the study of more advanced sciences. Both class room and laboratory work are given, the student being trained in habits of accurate observation and familiarized in a general way with the relations between the various branches of the natural sciences.

Physics 3a. Elementary Physics. Prerequisite, Mathematics 3. The course includes classroom and laboratory instruction in the mechanics of solids, liquids and gases, simple measurements, and the fundamental laws of heat, light, sound, invisible radiations and electricity.

Special attention is given to the preparation of the students of the various departments that they may be fitted for the studies coming later in their courses. The laboratory is fully equipped with up-to-date apparatus.

Drafting 6b¹. First year. Agriculture and Mechanics courses. General instruction in the use of instruments, plates in free-hand and mechanical lettering, solution of problems in geometrical construction and preparation of working drawings. A textbook will be used and occasional examinations given.

Drawing 6a¹. Work in pencil, crayon, water color and ink. Study of form and proportion, perspective and light and shade by means of pencil drawings of geometric forms, casts, still life, plant forms and machine models. Agriculture and Mechanics students give special attention to drawings of plans, perspective drawings of furniture and buildings, and to furniture design. Household Arts students adapt conventionalized plant forms to design for embroidery and begin the study of color applied to drawing and design of costume. First year, all courses.

Drawing 6a². Second year. Household Arts course. Elective in other courses. A study of color and color schemes in relation to dress and house furnishings;

elementary work in costume illustration and design. Drawings of charcoal, crayon, and water color from still life, plants and landscape; pen drawing, lettering and decoration of printed page.

Music I. A drill in the more simple notations used in music, sight singing and chorus work. The aim of this course is to give the students an opportunity to discover the pleasure that music may bring them and develop an appreciation of the best music as well as an understanding of good songs.

Music II, III, IV. Consists of rote songs, ear training, rhythm, interval work, chord formation; major scales, minor scales, chromatic scales, dictation transposition and Musical History.

Band and Orchestra. Students are urged to become members of these organizations. Private lessons are given free to members of either division. The school has a complete set of band instruments; however, those having instruments are requested to bring their own.

Military Drill. By act of Congress all State Agricultural Schools are required to give instruction in the elements of military science.

The physical exercise, the discipline, the habits of promptness and reliability inculcated, are of great assistance in any occupation. To walk straight, to talk straight, to be neat, to respect the rights of others, to learn to obey orders before giving them, and to be decent because it is right and because it pays, are taught in conjunction with the regular drill. No boy can help being benefited by the discipline. The names of students taking drill are not on file with the War Department as is supposed by some. They are subject to no more of the obligations of a good citizen than they care to assume.

Elective Subjects. All electives are fully outlined in the courses of study and described in detail in the various department course tabulations.

COMMERCIAL COURSE.

The four year commercial course is designed to train the student for the profession of business. The purely technical subjects such as bookkeeping, shorthand and typewriting are carefully taught, but the courses necessary to give a fuller training in the processes of business and to train for leadership as well as for clerical work are also given due emphasis. The curriculum consequently includes commercial geography, commercial law, the history and economics of industry and advertising and salesmanship. A good foundation of general education is also provided by the three years' work in English, the training in history and science, and if desired a foreign language.

Penmanship and Spelling. The course in penmanship seeks to train the student to write in a rapid, legible and easy style. The Zaner system is employed.

Typewriting. The touch method is used in this course. The students become acquainted with business and legal forms.

Business Elements. This course deals with the fundamentals of business such as the writing of business letters, advertisements, commercial papers as notes, drafts, checks, etc. It presents practical problems in measurements, interest, percentage, banking, produce, customs, stocks and bonds, insurance, partnership and domestic and foreign exchange.

Commercial Arithmetic. This course begins with a review of the fundamental operations. Speed and accuracy are insisted upon. Special attention is given to percentage and all of its applications. Various computing devices are studied.

Bookkeeping I. This course seeks to train the student in the simpler transactions of business and to familiarize him with the use of the ordinary business papers and account books. He then studies invoice and sales books, cash books, bills of lading, leases, deeds, mortgages, stocks and bonds and the making out of business statements.

Bookkeeping II. In Bookkeeping II the student begins the study of regular office books such as are used in banks and in wholesale and retail business offices.

Stenography I. The Gregg system is employed. The theory and principles of shorthand are studied. Exercises from the manual and from dictation are given.

Stenography II. Rapid dictation is begun in this course and an effort made to develop speed and accuracy. Transcription on the typewriter is given as a part of the course.

Commercial Geography. Industries are first studied as they produce the commodities which are the basis of trade and then as they themselves are developed and conditioned by the localities in which they are situated. In connection with this, domestic and foreign commerce, governmental policies, taxation, transportation, etc., are considered.

Commercial Law. The purpose of this course is to give the student sufficient knowledge of commercial law to make him aware of his rights and his duties. The legal principles governing contracts, property, corporations, etc., are considered.

Industrial History and Economics. In this course the history of the world's commercial development is first sketched, the modern period being given most attention. The rise and development of the factory system, problems of production, distribution, exchange and consumption are considered.

Advertising and Salesmanship. The various means of advertising are studied and with them the psychology of buying and selling. An effort is made to stimulate the originality of students. Actual practice work is given in the class-room.

The technical subjects of the fourth year of the course will not be given in 1921-1922.

Commerce—(Four Year Course).

Course for Boys. Required for graduation, 230 credits.

FIRST YEAR				SECOND YEAR				THIRD YEAR				FOURTH YEAR			
Subjects	Semesters			Subjects	Semesters			Subjects	Semesters			Subjects	Semesters		
	First	Second	Practice		First	Second	Practice		First	Second	Practice		First	Second	Practice
English I	5	5	5	English II	5	5	5	English III	5	5	5	United States History and Civics	5	5	5
General Science	5	5	5	History I or Spanish I	5	5	5	History II or Spanish II or Laboratory Science	5	5	5	Commercial Geography	5	5	5
Business Elements	5	5	5	Typing	10	10	10	Elective	5 or 10	5 or 10	10	Commercial Law	5	5	5
Penmanship and Spelling	5	5	5	Bookkeeping I	10	10	10	Bookkeeping II	10	10	10	Industrial History	5	5	5
Frechand Drawing	5	5	5	Commercial	5	5	5	Stenography I	5	5	5	and Economics	5	5	5
Music	2	2	2	Arithmetic	5	5	5	Stenography II	5	5	5	Advertising and Salesmanship	5	5	5
Drafting or Carpentry	6	6	6	Drill	4	4	4	Drill	4	4	4	Stenography II	5	5	5
Assembly	4	4	4	Assembly	1	1	1	Assembly	1	1	1	*Laboratory Science	5	5	5
Student Affairs	1	1	1	Student Affairs	1	1	1	Student Affairs	1	1	1	or Spanish III	5	5	5
Elective	1	1	1	Elective	1	1	1	Elective	1	1	1	Drill	5	5	5
Totals	17	22	22	Totals	15	26	26	Totals	20	16	20	Totals	26	10	26
Credits	17	11	17	Credits	15	13	13	Credits	15	13	15	Credits	26	5	26

*The course must be arranged so that one Laboratory Science is taken and three years of History or Spanish or Science.

Commerce—(Four Year Course).
Course for Girls. Required for graduation, 230 credits.

FIRST YEAR					SECOND YEAR					THIRD YEAR					FOURTH YEAR				
Subjects		Semesters			Subjects		Semesters			Subjects		Semesters			Subjects		Semesters		
		First	Second	Practice			First	Second	Practice			First	Second	Practice			First	Second	Practice
English I	5	5	5	5	English II	5	5	5	5	English III	5	5	5	5	United States History and Civics	5	5	5	5
General Science	5	5	5	5	History I or Spanish I	5	5	5	5	History II or Spanish II or Laboratory Science other than Physiology	5	5	5	5	Commercial Geography	5	5	5	5
Business Elements	5	5	5	5	Typing	10	10	10	10	Elective	5 or 10	5 or 10	5 or 10	5 or 10	Commercial Law	5	5	5	5
Penmanship and Spelling	5	5	5	5	Bookkeeping I	10	10	10	10	Bookkeeping II	5	5	5	5	Industrial History and Economics	5	5	5	5
Freehand Drawing	5	5	5	5	Commercial Arithmetic	5	5	5	5	Stenography I	5	5	5	5	Advertising and Salesmanship	5	5	5	5
Music	2	2	2	2	Physical Training	4	4	4	4	Stenography II	5	5	5	5	*Physiology or Spanish III or Elective	5	5	5	5
Hygiene and First Aid	2	2	2	2	Glee Club Assembly	2	2	2	2	Student Affairs	1	1	1	1	Physical Training Assembly	5	5	5	5
Physical Training	4	4	4	4															
Glee Club Assembly	2	2	2	2															
	1	1	1	1															
Totals	19	19	19	19	Totals	15	27	15	27	Totals	20	16	20	16	Totals	25	10	25	10
Credits	19	9½	19	9½	Credits	15	13½	15	13½	Credits	15	26	15	26	Credits	25	5	25	5

*The course must be arranged so that one Laboratory Science is taken and three years of History or Spanish or Science.

